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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,337	02/26/2004	Stephen Todd	E0295.70199US00	3987

46630 7590 08/05/2011

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EXAMINER	
NAJEE-ULLAH, TARIQ S	
ART UNIT	**PAPER NUMBER**
2453	

NOTIFICATION DATE	DELIVERY MODE
08/05/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/787,337	TODD ET AL.	
	Examiner	Art Unit	
	TARIQ NAJEE-ULLAH	2453	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,14-32,34-54,56-71,73-88,90-108 and 110-116* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,14-32,34-54,56-71,73-88,90-108 and 110-116* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This is the Office action in response to the amendment filed July 19, 2011. Claims 1, 21, 41, 63, 80 and 97. Claims 1-12, 14-32, 34-54, 56-71, 73-88, 90-109 and 110-116 are pending.

Response to Arguments

2. The rejections under 35 U.S.C. 101, claims 21-32, 34-40, 80-88 and 90-96 have been amended to set forth a “non-transitory tangible computer readable medium.” As such, the rejections under 35 U.S.C. 101, claims 21-32, 34-40, 80-88 and 90-96 are withdrawn in view of this amendment.

3. Applicant's arguments filed July 19, 2011 with respect to prior art rejections of the claims rejected under 35 U.S.C. 103(a) have been fully considered but they are rendered moot in view of the new grounds for rejection presented in this Office action.

4. **Examiner's Note:** Examiner has cited particular paragraphs and/or columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

5. **Note:** Claims 41 and 97 recite the limitation "at least **one controller** coupled to the input" (emphasis added). Based on the claim language, it is not explicitly clear whether or not the "controller" is statutory under 35 U.S.C. 101 as a controller can be interpreted as software which is not a statutory category of invention. Upon examination of the specification, examiner determines that the claimed "controller" is statutory under 35 U.S.C. 101. The claimed "controller" is defined to be "dedicated hardware" or a hardware/software combination (original specification, page 23, lines 27-30).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-12, 14-32, 34-54, 56-67, 69-71, 73-84, 86-88, 90-104, 106-109 and 110-116 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 6,173,374 to Heil et al (Heil hereinafter) in view of US 2005/0097260 to McGovern et al (McGovern hereinafter).

Regarding claims 1, 21, 63, and 80, Heil discloses **receiving a request from a host computer to locate the unit of data previously stored in the storage environment** (Heil, fig. 3, step 400 shows an incoming request)**; and in response to**

receipt of the request, determining on which one of the plurality of storage clusters the unit of data is stored (Heil, fig. 3 shows a flowchart of how incoming requests are processed. In step 410, it is determined whether the unit of data requested is available on the local data disks or not. If the data requested is not on the local drives, the request is shipped to remote disks in the storage cluster)**.**

Heil does not explicitly teach storing **wherein the request identifies the unit of data via a content address that is based, at least in part, upon at least a portion of the content of the unit of data, wherein each of the plurality of storage clusters comprises a plurality of nodes that share software utility; based on the content address of the unit of data.** McGovern teaches storing **wherein the request identifies the unit of data via a content address that is based, at least in part, upon at least a portion of the content of the unit of data** (McGovern ¶16-19; the storage environment is a content addressable storage environment storing data units in a content addressable manner)**, wherein each of the plurality of storage clusters comprises a plurality of nodes that share software utility** (McGovern ¶16-19, 43-44, 53-54, 56, 65)**; based on the content address of the unit of data** (McGovern ¶16-19)**.** To provide the system and method of Heil with the added functionality of storing data in a content addressable manner would have been obvious to one of ordinary skill in the art, in view of the teachings of McGovern, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would

have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention.

Regarding claims 41 and 97, Heil discloses **an input that receives a request from a host computer to locate a unit of data on at least one of a plurality of storage clusters in a storage environment** (Heil, fig. 3, step 400 shows an incoming request)**, and at least one controller, coupled to the input, that: receives the request from the input** (Heil, fig. 2 shows the node, i.e. controller that is coupled to the network fibre channel backbone. Fig. 3, step 400 shows an incoming request to the node.)**; and in response to receipt of the request, determines on which of the plurality of storage clusters the unit of data is stored** (Heil, fig. 3 shows a flowchart of how incoming requests are processed. In step 410, it is determined whether the unit of data requested is available on the local data disks or not. If the data requested is not on the local drives, the request is shipped to remote disks in the storage cluster).

Heil does not explicitly teach storing **based on the content address of the unit of data, wherein each of the plurality of storage clusters comprises a plurality of nodes that share software utility.** McGovern teaches storing **based on the content address of the unit of data** (McGovern ¶16-19)**, wherein each of the plurality of storage clusters comprises a plurality of nodes that share software utility** (McGovern ¶16-19, 43-44, 53-54, 56, 65)**.** To provide the system and method of Heil with the added functionality of storing data in a content addressable manner would have been obvious to one of ordinary skill in the art, in view of the teachings of McGovern, since all the claimed elements were known in the prior art and one skilled in the art

could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention.

Regarding claims 2, 22, 64, and 81, Heil-McGovern discloses the invention substantially as described in claims 1, 21, 63, and 80 above including, **wherein the host computer executes an application program that stores data to and retrieves data from the storage environment** (Heil, col. 3, lines 30-48)**, wherein the host further executes an application programming interface that interfaces the application program to the storage environment, and wherein the act of receiving is performed by the application programming interface** (Heil, col. 3, lines 30-48)**.**

Regarding claims 3, 23, 65, and 82, Heil-McGovern discloses the invention substantially as described in claims 1, 21, 63, and 80 above including, **wherein the storage environment is coupled to the host computer by at least one communication link** (Heil, figs. 1-2)**, wherein the host computer, the storage environment, and the at least one communication link form a computer system** (Heil, figs. 1-2)**, wherein the computer system includes an appliance that monitors access requests from the host computer** (Heil, fig. 3)**, and wherein the act of receiving the request further comprises an act of receiving, at the appliance, the request from the application** (Heil, fig. 3; col. 3, lines 30-48)**.**

Regarding claims 4 and 24, Heil-McGovern discloses the invention substantially as described in claims 3 and 23 above including, **wherein the act of determining is performed by the appliance** (Heil, fig. 4A, step 502)**.**

Regarding claims 5, 25, 66, and 83, Heil-McGovern discloses the invention substantially as described in claims 1, 21, 63, and 80 above including, **wherein the host computer executes an application program that stores data on the storage environment** (Heil, fig. 3; col. 3, lines 30-48; McGovern ¶16-19)**, and wherein the act of receiving the request further comprises an act of receiving the request directly from the application program** (Heil, fig. 3; col. 3, lines 30-48; McGovern ¶16-19)**.**

Regarding claims 6, 26, 67, and 84, Heil-McGovern discloses the invention substantially as described in claims 4, 23, 66, and 83 above including, **wherein the act of receiving the request further comprises an act of receiving the request at least one of the plurality of storage clusters** (Heil, figs. 2-3; McGovern ¶16-19)**.**

Regarding claims 7, 27, and 49, Heil-McGovern discloses the invention substantially as described in claims 6, 26, and 48 above including, **wherein the at least one of the plurality of storage clusters includes at least one access node that receives and processes access requests** (Heil, figs. 1-2; McGovern ¶16-19)**, and wherein the act of receiving the request from the application program at the at least one of the plurality of storage clusters further comprises an act of receiving the request at the at least one access node** (Heil, fig. 2 shows where the requests are received at the node, figs. 3-4C describe the steps of receiving a request. ; McGovern ¶16-19)**.**

Regarding claims 8, 28, and 50, Heil-McGovern discloses the invention substantially as described in claims 1, 21, and 41 above including, **wherein the act of**

determining comprises an act of performing a search for the unit of data on the plurality of storage clusters (Heil; figs. 4A-4D; col. 4, lines 7-20; McGovern ¶16-19)**.**

Regarding claims 9, 29, and 51, Heil-McGovern discloses the invention substantially as described in claims 8, 28, and 50 above including, **wherein the act of performing a search for the unit of data further comprises an act of performing the search serially through the plurality of storage clusters until the unit of data is found** (Heil; figs. 4A-4D; col. 4, lines 7-20; McGovern ¶16-19)**.**

Regarding claims 10, 30, and 52, Heil-McGovern discloses the invention substantially as described in claims 8, 28, and 50 above including, **wherein the act of performing a search for the unit of data further comprises an act of performing the search** (Heil; figs. 4A-4D; col. 4, lines 7-20; McGovern ¶16-19) **on each of the plurality of storage clusters in parallel** (Heil; col. 1, lines 44-45; col. 2, lines 16-22; McGovern ¶16-19)**.**

Regarding claims 11, 31, and 53, Heil-McGovern discloses the invention substantially as described in claims 1, 21, and 41 above including, **wherein the act of determining is performed by at least one of the plurality of storage clusters** (Heil, fig. 3, fig. 4A, step 502; McGovern ¶16-19)**.**

Regarding claims 12, 32, and 54, Heil-McGovern discloses the invention substantially as described in claims 1, 21, and 41 above including, **wherein the act of determining comprises locating the unit of data on at least one of the plurality of storage clusters without performing a search** (Heil; col. 4, lines 54-57, polls may be conducted instead of searches. ; McGovern ¶16-19)**.**

Regarding claims 14, 34, and 56, Heil-McGovern discloses the invention substantially as described in claims 1, 33, and 55 above including, **wherein the content address includes time information, based on when the unit of data was stored in the storage environment** (Heil, col. 12, lines 19-59; McGovern ¶16-19)**, and the act of determining** (Heil, fig. 3, figs. 4A-4C) **comprises an act of determining on which of the plurality of storage clusters the unit of data is stored based, at least in part, on the time information of the content address of the unit of data** (Heil, col. 12, lines 19-59; McGovern ¶16-19)**.**

Regarding claims 15, 35, and 57, Heil-McGovern discloses the invention substantially as described in claims 14, 34, and 56 above including, **wherein the act of determining further comprises an act of determining on which of the plurality of storage clusters the unit of data is stored based** (Heil, fig. 3, figs. 4A-4C)**, at least in part, on a hash value of the time information of the content address of the unit of data** (Heil, col.13, lines 11-13; McGovern ¶16-19)**.**

Regarding claims 16, 36, 58, 75, 91 and 112, Heil-McGovern discloses the invention substantially as described in claims 13, 33, 57, 72, 90 and 109 above including, **wherein the content address** (McGovern ¶16-19) **includes a guaranteed unique identifier (GUID)** (Heil, col. 8, lines 29-30, unique addresses, i.e. guaranteed unique identifier; McGovern ¶16-19)**, and wherein the act of determining further comprises an act of determining** (Heil, fig. 3, figs. 4A-4C) **on which of the plurality of storage clusters the unit of data is stored based, at least in part, on the GUID**

(McGovern ¶16-19; Heil, col. 8, lines 29-30, unique addresses, i.e. guaranteed unique identifier).

Regarding claims 17, 37, 59, 76, 93 and 113, Heil-McGovern discloses the invention substantially as described in claims 16, 36, 58, 75, 91 and 112 above including, **wherein the act of determining** (Heil, fig. 3, figs. 4A-4C) **further comprises an act of determining on which of the plurality of storage clusters the unit of data is stored based, at least in part, on a hash** (McGovern ¶16-19; Heil, col.13, lines 11-13) **of the GUID** (McGovern ¶16-19; Heil, col. 8, lines 29-30, unique addresses, i.e. guaranteed unique identifier).

Regarding claims 18, 38, 60, 77, and 94, Heil-McGovern discloses the invention substantially as described in claims 13, 33, 55, 72, and 89 above including, **wherein the act of determining** (Heil, fig. 3, figs. 4A-4C; McGovern ¶16-19) **further comprises acts of: accessing information that specifies an algorithm that was used to select on which of the plurality of storage clusters the unit of data was stored, based on the content address of the unit of data** (Heil, col.13, lines 4-14; McGovern ¶16-19); **and applying the algorithm to the content address of the unit of data to determine on which of the plurality of storage clusters the unit of data is stored** (Heil, col.13, lines 4-14; McGovern ¶16-19).

Regarding claims 19, 39, 61, 78, 95 and 115, Heil-McGovern discloses the invention substantially as described in claims 18, 38, 60, 77, 94 and 114 above including, **wherein the information specifies a plurality of algorithms used by the storage environment and during which period of time each of the plurality of**

algorithms was used to store units of data (Heil, col.13, lines 4-14; McGovern ¶16-19)**.**

Regarding claims 20, 40, and 62, Heil-McGovern discloses the invention substantially as described in claims 19, 39, and 61 above including, **wherein the information further specifies, for each one of the plurality of algorithms, at least one storage cluster that was in the storage environment during the period of time when the one of the plurality of algorithms was in effect** (Heil, col.13, lines 4-14; McGovern ¶16-19)**.**

Regarding claims 42 and 98, Heil-McGovern discloses the invention substantially as described in claims 41 and 97 above including, **the host computer that accesses data stored in the storage environment** (Heil, figs. 1-2; col. 1, lines 9-14; McGovern ¶16-19)**; and a communication link that couples the host computer to the storage environment to form a computer system** (Heil, figs. 1-2; col. 1, lines 9-14; McGovern ¶16-19)**.**

Regarding claims 43 and 99, Heil-McGovern discloses the invention substantially as described in claims 42 and 98 above including, **wherein the at least one controller is disposed in the host computer** (Heil, figs. 1-2; McGovern ¶16-19)**.**

Regarding claims 44 and 100, Heil-McGovern discloses the invention substantially as described in claims 42 and 98 above including, **wherein the at least one controller is disposed in the storage environment** (Heil, figs. 1-2; McGovern ¶16-19)**.**

Regarding claims 45 and 101, Heil-McGovern discloses the invention substantially as described in claims 42 and 98 above including, **wherein the at least one controller is disposed in between the storage environment and the host computer in an appliance that monitors access requests from the host computer to the storage environment** (Heil, figs. 1-2; McGovern ¶16-19)**.**

Regarding claims 46 and 102, Heil-McGovern discloses the invention substantially as described in claims 41 and 99 above including, **wherein the host computer executes an application program that stores data to and retrieves data from the storage environment** (Heil, figs. 1-3; col. 1, lines 9-14)**, wherein the host further executes an application programming interface that interfaces the application program to the storage environment** (Heil, figs. 1-3; col. 1, lines 9-14)**, and wherein the at least one controller receives the request at the application programming interface** (Heil, figs. 1-3; col. 1, lines 9-14; McGovern ¶16-19)**.**

Regarding claims 47 and 103, Heil-McGovern discloses the invention substantially as described in claims 41 and 97 above including, **wherein the host computer executes an application program that stores data in the storage environment** (Heil, figs. 1-3; col. 1, lines 9-14; col. 3, lines 30-48; McGovern ¶16-19)**, and wherein the at least one controller receives the request directly from the application program** (Heil, figs. 1-3; col. 1, lines 9-14; col. 3, lines 30-48; McGovern ¶16-19)**.**

Regarding claims 48 and 104, Heil-McGovern discloses the invention substantially as described in claims 44 and 100 above including, **wherein the**

apparatus is disposed in at least one of the plurality of storage clusters (Heil, figs. 1-2; McGovern ¶16-19)**.**

Regarding claims 69, 87, and 107, Heil-McGovern discloses the invention substantially as described in claims 63, 80, and 97 above including, **wherein the act of selecting further comprises an act of selecting one of the plurality of storage clusters to store the unit of data based on a load of at least one of the plurality of storage clusters** (Heil, col. 1, lines 24-36; McGovern ¶16-19)**.**

Regarding claims 70, 86, and 106, Heil-McGovern discloses the invention substantially as described in claims 63, 80, and 97 above including, **wherein the act of selecting further comprises an act of selecting one of the plurality of storage clusters to store the unit of data based, at least in part, on an available storage capacity of each of the plurality of storage clusters** (Heil, col. 1, lines 24-36; McGovern ¶16-19)**.**

Regarding claims 71, 88, and 108, Heil-McGovern discloses the invention substantially as described in claims 63, 80, and 97 above including, **wherein the act of selecting further comprises an act of selecting one of the plurality of storage clusters to store the unit of data based on a size of the unit of data** (Heil, col. 1, lines 24-36; McGovern ¶16-19)**.**

Regarding claims 73, 90, and 110, Heil-McGovern discloses the invention substantially as described in claims 63, 80, and 97 above including, **wherein the content address includes time information, based on when the unit of data was stored in the storage environment** (Heil, col. 12, lines 19-59)**, and the act of**

selecting comprises an act of selecting one of the plurality of storage clusters to store the unit of data based, at least in part, on the time information of the content address of the unit of data (Heil, col.13, lines 11-13; McGovern ¶16-19)**.**

Regarding claims 74, 91, and 111, Heil-McGovern discloses the invention substantially as described in claims 73, 90, and 110 above including, **wherein the act of selecting further comprises an act of selecting one of the plurality of storage clusters to store the unit of data based, at least in part** (Heil, col. 12, lines 19-59; McGovern ¶16-19)**, on a hash value of the time information of the content address of the unit of data** (Heil, col.13, lines 11-13; McGovern ¶16-19)**.**

Regarding claims 79, 96, and 116, Heil-McGovern discloses the invention substantially as described in claims 63, 80, and 97 above including, **storing the unit of data on the selected one of the plurality of clusters** (Heil, fig. 3, col. 3, lines 30-48; McGovern ¶16-19)**.**

Regarding claim 114, Heil-McGovern discloses the invention substantially as described in claims 109 above including, **wherein the at least one controller: applies an algorithm to the content address of the unit of data to determine on which of the plurality of storage clusters to store the unit of data** (Heil, col.13, lines 4-14)**; and stores the algorithm in a record that indicates a time frame in which the algorithm was in use** (Heil, col.13, lines 4-14; McGovern ¶16-19)**.**

6. Claims 68, 85, and 105 rejected under 35 U.S.C. 103(a) as being unpatentable over Heil-McGovern as applied to claims 63, 80, and 97 above, and further in view of US Patent Number 5,428,796 to Iskiyan et al (Iskiyan hereinafter).

Regarding claims 68, 85, and 105, Heil-McGovern discloses the invention substantially as described in claims 63, 80, and 97 above including **wherein the act of selecting further comprises an act of selecting one of the plurality of storage clusters to store the unit of data** (Heil, fig. 3, col. 3, lines 30-48; McGovern ¶16-19). Iskiyan teaches **using a round-robin technique** (Iskiyan, col. 8, lines 44-47)**.** Heil-McGovern does not explicitly teach storing **using a round-robin technique.** Iskiyan teaches **using a round-robin technique.** To provide the combination of Heil-McGovern with added functionality of using a round-robin technique would have been obvious to one of ordinary skill in the art, in view of the teachings of Iskiyan, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US 2007/0208788 to Chakravarty et al; US 7,366,836 to Todd et al; US 7,366,834 to McGovern et al; US 7,376,681 to Todd et al; US 7,979,665 to Todd et al.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

9. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TARIQ S. NAJEE-ULLAH whose telephone number is (571)270-5013. The examiner can normally be reached on Monday through Thursday 8:00 - 6:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Krista Zele can be reached on (571) 272-7288. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. N./
Examiner, Art Unit 2453
July 28, 2011

/Krista M. Zele/
Supervisory Patent Examiner, Art Unit 2453